

MITIGATION MEASURES

There are no significant impacts; therefore no mitigation measures are required under NEPA.

4.11 PUBLIC SERVICES AND UTILITIES

The following discussion addresses the impacts of the Proposed Action on the capacity of infrastructure and service providers. Storm water issues are addressed in Sections 3.6 and 4.6 Water Resources. Broad energy issues are discussed in Sections 3.12 and 4.12 Energy Efficiency and Renewable Energy. Environmental impacts from the construction of new utility infrastructure are discussed throughout Chapter 4, as appropriate.

4.11.1 Electricity and Gas

As described in Chapter 2, the Proposed Action requires and includes a major electrical system upgrade and a natural gas line extension from Highway 93. No significant impacts on the capacity of these systems or the local service providers are anticipated from the Proposed Action.

The demand for electricity and gas by the NWTC is not expected to be substantial with respect to Xcel Energy's overall capacity or local infrastructure. The new demand would not contribute substantially to peak period power demand and associated power generation capacities. However, all additional peak period power demand contributes incrementally toward the cumulative need for new power plants and corresponding environmental impacts. These cumulative impacts would be offset by NREL's commitment to sustainability, which includes purchasing "green" power, extensive on-site energy conservation measures, and the potential energy efficiency and renewable energy technology benefits anticipated from the work performed at the NWTC (see Sections 3.12 and 4.12 for related findings).

4.11.2 Telecommunications

The Proposed Action would improve and extend the on-site telecommunications infrastructure to support new research and development activities, facilities, and an increasing number of employees on the site. No off-site infrastructure requirements are needed and the capacity of local service would not be adversely impacted by the proposed improvements.

4.11.3 Domestic Water System

The Proposed Action would create no significant off-site water infrastructure requirements or significant demands on water sources. The capacity of on-site infrastructure and local service would be adequate with contemplated improvements.

The Proposed Action includes improvements that would upgrade the existing domestic water system to accommodate additional buildings and water use. Water use would be expected to increase as new buildings and facilities are constructed and as additional on-site employees are added. The additional water would be hauled onto the site by more frequent and/or larger capacity truck deliveries. If water delivery trucks hauling the same volume of water per trip continue to serve the site, delivery frequencies would be expected to increase in a manner roughly proportional to facility development and employee growth. The long-term scenario

could involve multiple truck trips per week relative to one trip per week in 2001 based on a long-term increase in on-site employees.

The current water system can accommodate additional buildings and associated office areas and restroom facilities with the addition of an underground pipe that would be installed from new buildings to the nearest domestic water loop. This improvement would be included in individual building designs.

4.11.4 Sewage

The Proposed Action would increase demand on existing septic tank and leach field systems in proportion to on-site employment growth. Increased demand would include improvements associated with new buildings and other improvements. These improvements are expected to involve additional septic tank and leach fields, as necessary. The size of each septic tank and leach field would be based on maximum staffing at each facility and associated soil conditions. Existing and proposed systems to address site needs adequately and would satisfy State requirements.

4.11.5 Emergency Response and Fire Protection

The new facilities and additional staff associated with the Proposed Action would incrementally increase demand for police, fire and ambulance services, but the increases would be considered minor given site use and anticipated needs for emergency service providers.

The Proposed Action would not increase the risk of wildfire on the site, but it would result in the installation of new facilities, equipment, and buildings, as well as the presence of additional people. The NREL Fire Protection Program currently addresses this risk and other fire risks. The Proposed Action includes fire hydrant requirements and new underground piping to protect new and existing facilities, buildings, equipment and personnel. No off-site infrastructure requirements would be needed, and the capacity of on-site and local infrastructure and local service would not be disrupted by the proposed improvements or new demands for fire protection services.

4.11.6 Impacts of the No Action Alternative

The No Action Alternative would limit demand growth for public services and utilities by retaining existing employment levels and operational activity at current levels. New buildings, machines and equipment would not be added. Incremental capacity impacts on existing service providers caused by the Proposed Action and the impacts of associated infrastructure improvements would be avoided.

MITIGATION MEASURES

There are no significant impacts; therefore no mitigation measures are required under NEPA.

4.12 ENERGY EFFICIENCY AND RENEWABLE ENERGY

The Proposed Action has a complex impact on energy because it will increase on-site energy demand, generate electricity for use on-site, may generate some electricity for distribution